Pacific Coastal Salmon Recovery Fund Workshop

Breakout Session Summary
Monitoring and Evaluation Protocols
December 12, 2002
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Monitoring - Core Indicators

After doing a little brainstorming on general issues related to core indicators (detailed below), the group developed a list of project types and core indicators related to each:

PROJECT TYPES	SUGGESTED CORE INDICATORS
Instream	
Barrier removal	Presence/absence of fish Passage criteria
Large woody debris	Number of pieces of wood put in stream Size Change in natural habitat Fish abundance Amount of cover Living space for fish
Spawning habitat enhancement	Number of reds Substrate sampling Spawning area Fish abundance/distribution Macroinvertebrates
Side channels/reconnecting isolated habitat/floodplain restoration	Fish abundance/distribution Macroinvertebrates Primary productivity
Re-introduction of beavers	Beaver ponds Woody debris
Screening diversions	Presence/absence of fish Survival Fish screening criteria
Increasing in-stream flows	Flow rate Water temperature Fish abundance
Carcess and nutrient enhancement	Primary productivity Macroinvertebrates Fish growth
Upslope	
Road de-commissioning/upgrading	Sediment levels in stream number of crossings removed volume of sediment removed

	number of streams re-connected mass failures
Re-vegetation	Number of trees Density of vegetation Tree survival Slope stability (long-term item) Sediment levels
Storm water control (detention/retention)	Hydrology Peak flows Water quality
Riparian	
Fencing	Shade Water temperature Bank stability Livestock numbers Substrate Sediment levels
Planting	Water temperature Tree survival Shade
Conifer conversion	Water temperature Tree survival Shade
Watering projects	Shade Water temperature Bank stability Livestock numbers Substrate Sediment levels
Invasive plant species control	Number of invasives Number of natives Plant diversity
Thinning	Growth increment Riparian vegetation composition

The group then created a matrix, summarizing and simplifying the indicators listed above:

	fish abun-dance	pre-sence/ absnce of fish	sedimts	water quality	prim produc-tivity	macro-Inverts	phys hab quant/ quality	woody debris	hydro-logy	vege-tative meas's
Instream										
Barrier	X	X							X	
Lg woody Debris	X						X	X		
Spawning	X	X	X				X			
Side chan	X	X			X	X				
Beavers							X	X		
Screening Diversions	X								X	
Inc'ing Flows	X			X					X	
Carcess/ Nutrient	X				X	X				
Upslope										
Road De-comm			X						X	
Re-veg			X							X
Storm water				X					X	
Riparian										
Fencing			X	X						X
Planting				X						X
Conifer				X						X
Watering			X	X						X
Invasive Plants										X
Thinning										X

During the early brainstorming part of the session, several group members made some suggestions for overarching issues to be considered:

- Core indicators should measure a physical change in the habitat
- Indicators should be evaluated based on their:
    - Replicability
    - Affordability
    - Understandability